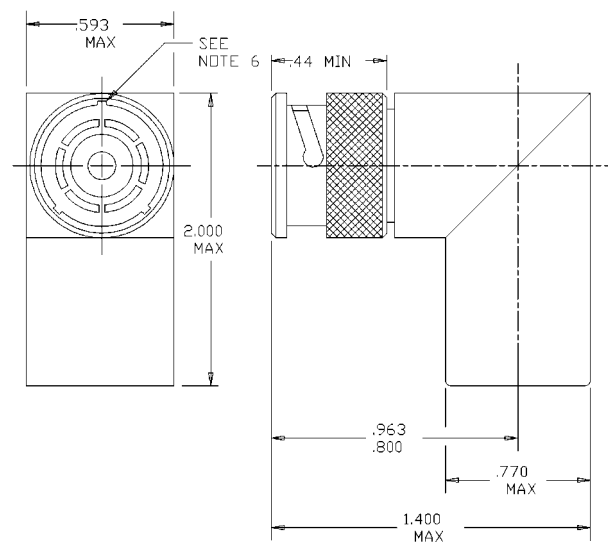


## PERFORMANCE SPECIFICATION SHEET

CONNECTOR, PLUG, ELECTRICAL, TRIAXIAL, RADIO FREQUENCY  
 (SERIES TRB (CABLED), PIN CONTACT, RIGHT ANGLE, CLASS 2)

This specification is approved for use by all Departments  
 and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of  
 this specification and MIL-PRF-49142.



| Inches | mm    |
|--------|-------|
| .44    | 11.18 |
| .510   | 12.95 |
| .593   | 15.06 |
| .770   | 19.56 |
| .800   | 20.32 |
| .963   | 24.46 |
| 1.400  | 35.56 |
| 2.000  | 50.80 |

## NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. 2.000 (50.80 mm) defines the maximum length of the connector when assembled to the appropriate cable.
4. Wrench flats are to accommodate standard wrench openings in accordance with FED-STD-H28.
5. All undimensioned pictorial representations are for reference purpose only.
6. Alternate keying configurations, see MIL-PRF-49142, figure 1.
7. Interface shall be in accordance with MIL-STD-348, series TRB, pin contact.

FIGURE 1. General configuration.

MIL-PRF-49142/7C

ENGINEERING DATA:

Nominal impedance: Nonconstant.

Frequency range: 0 to 500 MHz minimum.

Voltage rating: 400 V rms maximum working voltage at sea level. 100 V rms maximum working voltage at 70,000 feet.

Temperature range: -65°C to +165°C.

REQUIREMENTS:

Dimensions and configuration: See figure 1 and MIL-STD-348.

Force to engage and disengage:

Longitudinal force: 4 pounds maximum.

Torque: 2.5 inch-pounds maximum.

Coupling proof torque: Not applicable.

Mating characteristics: See MIL-STD-348 for dimensions.

Intermediate contact:

Test ring ID: .169 inch maximum, 16-microinch finish.

Insertion force: 3 pounds maximum, when inserted a minimum of .093 inch,

Contacts with slotted members: Shall contact a .173 inch minimum diameter ring within .031 inch of their tip ends.

Outer contact:

Test ring ID: .319 inch maximum, 16-microinch finish.

Insertion force: 5 pounds maximum, when inserted a minimum of .093 inch.

Contacts with slotted members: Shall contact a .324 inch diameter ring within .031 inch of their tip ends.

Permeability: Applicable.

Hermetic seal: Not applicable.

Leakage: To be added.

Insulation resistance: 5,000 megohms.

Outer conductor retention: 6 pounds minimum axial force.

Dielectric withstanding voltage: At sea level, 1,200 V rms, between center conductor and intermediate conductor: 500 V rms, between intermediate conductor and outer conductor.

Salt spray (corrosion): Applicable.

Vibration: Applicable.

Shock: Applicable.

Thermal shock: Applicable (except high test temperature shall be +200°C for connectors using +200°C cables).

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Moisture resistance: Applicable.

Conductor resistance: In milliohms, maximum.

|                        | <u>Initial</u> | <u>After environment</u> |
|------------------------|----------------|--------------------------|
| Center conductor:      | 2.0            | 2.5                      |
| Intermediate conductor | 0.5            | 0.6                      |
| Outer conductor        | 0.2            | 0.3                      |

Dash number and applicable cable: See table I.

TABLE I. Dash number and applicable cable.

| *Dash number  | Cable <u>1/</u>                |
|---|--------------------------------|
| Category A – No special tools required <u>2/ 3/</u>         |                                |
| 0001 <u>4/</u><br>0101<br>0201                              | M17/134-00001<br>M17/134-00003 |
| 0002 <u>4/</u><br>0102<br>0202                              | M17/134-00002<br>M17/134-00004 |
| 0003 <u>5/</u>  | D3-7619-5/336                  |
| 0004 <u>5/</u>  | D3-7619-5/338                  |
| 0005 <u>5/</u>  | M17/116-RG307                  |
| 0006 <u>4/</u> , 3006 <u>4/</u><br>0106, 3106<br>0206, 3206 | M17/176-00002 <u>6/</u>        |
| 0007 <u>4/</u><br>0107<br>0207                              | M17/177-00001 <u>6/</u>        |
| 0008 <u>4/</u><br>0108<br>0208                              | M17/178-00001                  |
| 0009 <u>4/</u><br>0109<br>0209                              | M17/179-00001                  |
| 0010 <u>4/</u><br>0110<br>0210                              | M17/135-00003<br>M17/135-00005 |
| 0011 <u>4/</u><br>0111<br>0211                              | M17/135-00004<br>M17/135-00006 |

See footnotes at end of table.

TABLE I. Dash number and applicable cable – Continued.

| *Dash number   | Cable <u>1/</u>                |
|--|--------------------------------|
| Category G – Use of MIL-C-22520 tool required for assembly <u>2/</u> <u>7/</u> <u>8/</u> |                                |
| 0012 <u>4/</u><br>0112<br>0212   | M17/135-00003<br>M17/135-00005 |
| 0013 <u>4/</u><br>0113<br>0213   | M17/134-00001<br>M17/134-00003 |
| 0014 <u>4/</u><br>0114<br>0214   | M17/134-00002<br>M17/134-00004 |
| 0015 <u>4/</u><br>0115<br>0215   | M17/116-RG307                  |
| 0016 <u>4/</u><br>0116<br>0216<br>3016 <u>4/</u><br>3116<br>3216                         | M17/45-RG108<br>M17/186-00001  |
| 0017 <u>4/</u><br>0117<br>0217<br>3017 <u>4/</u><br>3117<br>3217                         | M17/176-00002 <u>6/</u>        |
| 0018 <u>4/</u><br>0118<br>0218   | M17/177-00001 <u>6/</u>        |
| 0019 <u>4/</u><br>0119<br>0219   | M17/178-00001                  |
| 0020 <u>4/</u><br>0120<br>0220   | M17/179-00001                  |
| 0021 <u>4/</u><br>0121<br>0221   | M17/135-00004<br>M17/135-00006 |

\* Not for Naval Air Systems Command (AS) use.

1/ The latest version of each cable shall be applicable.

2/ These connectors have captivated center contacts.

3/ Not for Navy use.

4/ Preferred keying arrangement.

5/ Inactive for new design (see table III).

6/ Cables to be used for the +200°C thermal shock test.

7/ These connectors are assembled using the applicable crimping tool to the specified cables.

8/ Complete connector assembly shall consist of a body, center contact, intermediate contact, ferrule, and assembly instructions.

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Corona level:

Altitude: 70,000 feet.

Voltage: 250 V rms minimum.

RF high potential withstanding voltage:

800 V rms, between center conductor and intermediate conductor.

200 V rms, between intermediate conductor and outer conductor at 5 MHz to 7.5 MHz.

Leakage current: Not applicable.

Cable retention force (for cable .200 inch to .325 inch outside dimension): 40 pounds minimum.

Coupling mechanism retention force: 100 pounds minimum.

Rise time degradation: 400 picoseconds maximum. (Not applicable to connectors using twin conductor cables.)

Connector durability: 500 cycles minimum at 12 cycles per minute maximum.

Part or Identifying Number (PIN): M49142/07- (dash number from table I).

Group qualification: See table II.

Cross-reference of cables: See table III.

Retention of qualification: See table IV.

TABLE II. Group qualification. 1/

| Groups | Submission and qualification of any of the following dash numbers | Qualifies the following dash numbers         |
|--------|---|--|
| I      | *X01<br>*X02<br>*X07  | *X01<br>*X02<br>*X07                         |
| II     | *X03<br>*X04<br>*X08<br>*X09                                      | *X03<br>*X04<br>*X08<br>*X09                 |
| III    | *X06  | *X06   |
| IV     | *X13<br>*X14<br>*X15<br>*X18                                      | *X13<br>*X14<br>*X15<br>*X18                 |
| V      | *X16<br>*X17  | *X16<br>*X17                                 |
| VI     | *X19<br>*X20  | *X19<br>*X20                                 |
| VII    | *010<br>*110<br>*210<br>*011<br>*111<br>*211                      | *010<br>*110<br>*210<br>*011<br>*111<br>*211 |
| VIII   | *012<br>*112<br>*212<br>*021<br>*121<br>*221                      | *012<br>*112<br>*212<br>*021<br>*121<br>*221 |

1/ If a connector manufacturer produces a connector which meets all the requirements for two or more connector PINs (within same series), the manufacturer may receive qualification approval for two or more connector PINs by qualifying the one connector. It is not necessary that such connectors be in the same group. Each connector, however, must be marked with its own appropriate PIN. For group qualification, the connectors must be of similar design. Qualification of connectors qualifies connectors of the same body material and finish only. \* Designates body material and finish. X designates keying (see MIL-PRF-49142).

TABLE III. Cross-reference of cables.

| Preferred cable | Superseded cable |
|-----------------|------------------|
| M17/177-00001   | 380-10045-1      |
| M17/178-00001   | D3-7619-5/336    |
| M17/179-00001   | D3-7619-5/338    |

TABLE IV. Retention of qualification.

| Subgroup | /3 & /8 |         | /4 & /10 | /5 & /9 |     | /6 & /11 |          |
|----------|---------|---------|----------|---------|-----|----------|----------|
| 1        | /3-0008 | ---     | /4-0004  | ---     | --- | ---      | ---      |
| 2        | /3-0008 | /8-0006 | /4-0004  | ---     | --- | ---      | /11-0006 |
| 3        | /3-0008 | /8-0006 | ---      | ---     | --- | ---      | ---      |
| 4        | /3-0008 | /8-0006 | ---      | ---     | --- | /6-0007  | /11-0006 |
| 5        | /3-0008 | ---     | /4-0004  | ---     | --- | ---      | ---      |
| Units    | 15      | 9       | 9        | 0       | 0   | 3        | 6        |

NOTE: Revision letters are not used to denote changes due to the extensiveness of the changes.

## CONCLUDING MATERIAL

## Custodians:

Army - CR  
 Navy - EC  
 Air Force - 11  
 NASA - NA  
 DLA - CC

## Preparing activity:

DLA - CC

(Project 5935-4550-004)

## Review activities:

Army - AR, AT, MI  
 Navy - AS, MC, OS, SH  
 Air Force - 19, 99